

### **REMARKS**

By the foregoing Amendment, Claims 1, 5, 6, 8, 10, 12, 14, 19, 27, 29 and 37 are amended and Claims 3, 9, 17 and 18 are cancelled. Entry of the Amendment, and favorable consideration thereof, is earnestly requested. Claims 21, 22, 25 and 44 having been previously cancelled, and Claims 3, 9, 17 and 18 being cancelled herein, Claims 1, 2, 4-8, 10-16, 19, 20, 23, 24, 26-43 and 45-64 are currently pending.

### **Claim Objections**

Claims 1, 6, 12, 17, 27, 29 and 37 were rejected as containing informalities. Claims 1, 6, 12, 27, 29 and 37 have been amended, and Claim 17 has been cancelled, such that Applicant believes the objections have been obviated. Claim 14 has also been amended accordingly.

### **Rejections under 35 U.S.C § 112**

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner has asserted that “[i]t is unclear how much, or how little, non-biodegradable polymer the chewing gum mat contain to be considered ‘substantially free’ of the non-biodegradable polymer.” Applicant respectfully traverses this rejection.

The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. See MPEP § 2173.05(b). Specifically, it has been recognized that the term "substantially" is often used in conjunction with another term to describe a particular characteristic of the claimed invention, and that while it is a broad term, its use is generally acceptable. *In re Nehrenberg*, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). For example, in a case similar to the present one, the Court held that the limitation "which produces substantially equal E and H plane illumination patterns" was definite because one of ordinary skill in the art would know what was meant by "substantially equal." *Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988).

In the present case, Applicant respectfully submits that one skilled in the art would know what is meant by the term "substantially free" (i.e., that the chewing gum contains no effective amount of non-biodegradable polymers, although a non-functional trace amount may be present). The Examiner has provided no rationale as to why one skilled in the art would not know what is meant by the term, and instead appears to be stating that the term "substantially" is essentially always indefinite, which of course, is contrary to case law and MPEP guidelines. There is

no analysis as to why the term “substantially” is indefinite in this particular instance, as opposed to those cases where the Court has found its use perfectly acceptable. As such, Applicant respectfully asks that this rejection be withdrawn.

Claims 3-5, 10 and 17 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention on the basis that the term “comonomer” is unclear. Applicant respectfully asks the Examiner to reconsider this rejection.

Applicant respectfully submits that the at least two different monomers used according to Claim 1 may be called a first and a second monomer or a monomer and a comonomer. Applicant also respectfully submits that the understanding of the latter term will be clear to the person skilled in the art. Moreover, Applicant points out that according to Merriam-Websters Online dictionary: “*comonomer: one of the constituents of a copolymer*”

Hence, Applicant respectfully submits that one skilled in the art would understand what is being claimed, and that the wording is simply a matter of taste. Applicant prefers to maintain the present wording (i.e., monomer and comonomer) in order to ensure conformity with the description, and believes maintaining the consistent wording throughout the application actually results in better clarity.

Claims 4 and 5 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention on the basis that the term “the at least one backbone comonomer” has no antecedent basis. Applicant believes that this rejection has been obviated by the above amendments to Claim 1.

Claim 6 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention on the basis that it was unclear as to whether all of the at least two monomers were required to be lactone monomers. Claim 6 has been amended in a manner which Applicant believes obviates this rejection.

Claim 9 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention on the basis that it was unclear as to whether the claimed T<sub>g</sub> is to be of the unpolymerized monomer or a polymer consisting of the monomer. Claim 9 has been cancelled.

Claim 17 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which Applicant regards as the invention on the basis that it was unclear as to what the term “at least one monomer” was in reference to. Claim 17 is now, together with Claims 3 and 18, incorporated into Claim 1 by the above amendment of Claim 1. It is recited in amended Claim 1 that “at least one of said backbone monomers is a carbonate monomer.” Therefore the “carbonate monomer present in the amount of about 0.5 to 25 wt%” is part of the “at least one backbone monomer in the amount of about 20 to 80 wt%.” In conclusion, according to amended Claim 1, the carbonate monomers are a part of the backbone monomers and not of the backbone comonomers.

Claim 19 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention on the basis that the term “multifunctional initiator” has no antecedent basis. Applicant believes that this rejection has been obviated by the above amendments to Claim 19.

#### **Rejections under 35 U.S.C § 102 (b)**

Applicant respectfully submits that, in view of the above amendments, the rejection of Claim 1 (and all dependent claims) under 35 U.S.C 102(b) has been overcome and should be withdrawn. Claim 17 and 18, which are now incorporated into Claim 1 by the above amendments, were not rejected under 102(b) in the

outstanding Office Action. As such, Applicant believes that the previously made rejections under 35 U.S.C. 102(b) are now moot.

**Rejections under 35 U.S.C § 103 (a)**

Claims 17 and 18, now incorporated, along with Claim 3, into Claim 1, were rejected under 35 U.S.C. § 103(a) as being unpatentable over Goldberg et al. (WO 01/47368). Applicant respectfully asks the Examiner to reconsider these rejections in view of the above Amendments and the below Remarks.

The Examiner states that Goldberg et al. teaches two different monomers in ranges overlapping those now included in the currently amended Claim 1. The Examiner also cites Goldberg et al., page 16, lines 22-24, which states: "The optimal level of the second monomer will depend on the specific structure of the second monomer and can be determined by those skilled in the art." This statement is used in the Examiner's argumentation to assert that the ranges for amounts of monomer and comonomer given in the amended Claim 1 are obvious in light of Goldberg et al.

With respect to type, amount and functional number of the initiator as specified in the amended Claim 1, the Examiner states that the determination of the type, amount, and functional number of the initiator would have been well

within the abilities of one of ordinary skill in the art at the time the invention was made.

However, Applicant respectfully submits that in view of the large number of monomers suggested by Goldberg et al. for use in their polymers with no teachings indicating any of the resulting polymers to be particularly useful in chewing gum, the above citation merely corresponds to a "black box" represented by "those skilled in the art". At the time the invention was made, the use of biodegradable polymers in chewing gum had not been dealt with in great detail. It is contested by the Applicant that the level of ordinary skill in the chewing gum art would allow for determinations such as those suggested by the Examiner to be made in view of Goldberg et al.

More specifically, the Examiner's evaluation of the abilities of the skilled person at the time of the invention seems to be colored by the cited statement of Goldberg et al. It is contested by Applicant that the choice of type, amount and functional number of the initiator is obvious to one skilled in the chewing gum art. Bearing in mind the status of biodegradable polymers in chewing gum at the time the invention was made, the skilled person would have no starting point for his/her choice of such substances.

Applicant stresses that the preparation of biodegradable polymers useful in chewing gum is very different from just preparing a polymer. The teachings of Goldberg et al. render all possible polymers mentioned in the document equally suitable for chewing gum with all other components than the biodegradable polymer being not critical (Goldberg et al., page 4, lines 5-6). Goldberg et al. reflects this view in that not many specific teachings with regard to chewing gum are available from Goldberg et al. (See also Goldberg et al., page 9, last paragraph to page 14, first paragraph, and page 15, last paragraph to page 16, second paragraph).

The Examiner's view that levels of monomers and type, amount and functional number of the initiator is obvious to the skilled person lacks any indication as to wherefrom the skilled person has acquired his/her knowledge. Just taking any coincidental combination of first and second monomers according to Goldberg et al. would not very likely result in advantageous chewing gum properties, but applying the initiator and monomers as set forth by the present invention in amended Claim 1 would result in advantageous properties of the obtained degradable polymer and chewing gum, which is substantially free of non-biodegradable polymers.

Advantages of the invention are stated in the description, *inter alia*, in paragraphs [0013] - [0016] and [0054] as follows:



[0013] According to the invention, the obtained polymer has elastomeric properties suitable for chewing gum.

[0014] According to the invention, a polymer structure being very suitable as chewing polymer/elastomer has been obtained.

[0015] According to the invention it has been realized that a certain degree of branching of the backbone is needed to obtain a final improved performance, when the polymer, preferably the elastomer, is incorporated in a chewing gum. It has moreover been realized that the obtained branching needs to be carefully controlled in order to avoid too much branching-induced crosslinking.

[0016] According to the invention, it has surprisingly been realized that this balance between branching/cross-linking may be controlled by a suitable pairing of initiator and carbonate monomer. Such pairing includes among the most significant "control knobs" the mutual concentration of the initiator versus the carbonate monomer.

...

[0054] Moreover, it has been realized that an increase in the functionality of the initiator results in an improved texture and/or improved release of chewing gum ingredients when the polymer is incorporated in a chewing gum.

For the reasons stated above, Applicant respectfully submits that amended Claim 1 is not obvious over Goldberg et al. and accordingly, because the skilled person could not have arrived at the present invention based on Goldberg et al. and what was known in the chewing gum art at the time the invention was made, this rejection under 35 U.S.C. 103(a) has been overcome and should be withdrawn.

**Double Patenting Rejections**

With respect to the provisional nonstatutory obviousness-type double patenting rejection, Applicant will consider submitting the appropriate terminal disclaimer once allowable matter has been identified in the present case.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1, 2, 4-8, 10-16, 19, 20, 23, 24, 26-43 and 45-64, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,

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